

What is claimed is:

1 1. A valve body for use in a full-open seat, stem-guided valve, the valve body
2 comprising:

3 first and second portions symmetrical about first and second longitudinal
4 axes respectively, said first and second longitudinal axes being colinear and forming a
5 common longitudinal axis, and said first and second portions being joined through a
6 cylindrical web of predetermined minimum thickness,

7 wherein said cylindrical web is radially spaced apart from and
8 symmetrically disposed about said common longitudinal axis;

9 wherein the valve body totally encloses a hollow; said hollow being
10 symmetrical about said common longitudinal axis and extending radially from said
11 common longitudinal axis to said cylindrical web;

12 wherein said first portion comprises a top guide stem extending away from
13 said hollow along said first longitudinal axis, and said second portion comprises a crow-
14 foot guide extending away from said hollow along said second longitudinal axis; and

15 wherein said cylindrical web spaces apart and connects opposing walls of
16 an integral seal retention groove in the valve body.

1 2. The valve body of claim 1 wherein said opposing integral seal retention
2 groove walls comprise at least one serration.

1 3. The valve body of claim 2 wherein said at least one serration comprises an
2 as-machined surface.

1 4. The valve body of claim 2 wherein said at least one serration comprises an
2 as-forged surface.

1 5. A full-open seat, stem-guided valve comprising the valve body of claim 1,
2 a corresponding full-open seat, and an elastomeric seal cast and cured in said integral seal
3 retention groove of the valve body without a bonding agent between said elastomeric seal
4 and said seal retention groove.

1 6. A valve body for use in a full-open seat, stem-guided valve, the valve body
2 comprising:

3 first and second portions symmetrical about first and second longitudinal
4 axes respectively, said first and second longitudinal axes being colinear and forming a
5 common longitudinal axis, and said first and second portions being joined through a
6 cylindrical web of predetermined minimum thickness;

7 wherein said cylindrical web is radially spaced apart from and
8 symmetrically disposed about said common longitudinal axis;

9 wherein the valve body encloses a hollow, said hollow being substantially
10 symmetrical about said common longitudinal axis and extending radially from said
11 common longitudinal axis to said cylindrical web;

12 wherein said first portion comprises a top guide stem extending away from
13 said hollow along said first longitudinal axis, and said second portion comprises a crow-
14 foot guide extending away from said hollow along said second longitudinal axis;

15 wherein said top guide stem comprises a longitudinal fluid passage;

16 wherein said hollow is in fluid communication with space outside the
17 valve body through said longitudinal fluid passage; and

18 wherein said cylindrical web spaces apart and connects opposing walls of
19 an integral seal retention groove in the valve body.

1 7. The valve body of claim 6 wherein welding flash protrudes from said
2 cylindrical web into said integral seal retention groove.

1 8. The valve body of claim 6 wherein said opposing integral seal retention
2 groove walls comprise at least one serration.

1 9. A full-open seat, stem-guided valve comprising the valve body of claim 6,
2 a corresponding full-open seat, and an elastomeric seal in said integral seal retention
3 groove of the valve body, and wherein said longitudinal fluid passage is plugged.

1 10. A full-open seat, stem-guided valve comprising the valve body of claim 7,
2 a corresponding full-open seat, and an elastomeric seal cast and cured in said integral seal
3 retention groove of the valve body, said seal enveloping said welding flash without use of
4 a bonding agent.